IJUP

ENCONTRO DE INVESTIGAÇÃO JOVEM

10ª EDIÇÃO

UNIVERSIDADE DO PORTO

BOOK OF ABSTRACTS

10TH MEETING OF YOUNG RESEARCHERS OF UNIVERSITY OF PORTO

U.PORTO

CREDITS

Livro de Resumos do 10.º Encontro de Jovens Investigadores da U.PORTO

Universidade do Porto

Vice-reitora para a I&D, Professora Doutora Maria João Ramos

ijup@reit.up.pt

ISBN

978-989-746-117-0

Design

Gabinete de Comunicação e Imagem da U.Porto

SCIENTIFIC COMMITTEE

Alexandra Pinto

Aurora Teixeira

Elisa Keating

Elisabete Ferreira

Filipe Castro

Gonçalo Furtado

Graciela Machado

Jorge Teixeira

Laura Oliveira

Manuel Simões

Maria João Ramos

Maria Oliveira

Maria Paula Santos

Nuno Cerqueira

Patricia Antunes

Patrícia Valentão

Pedro Gomes

Rita Faria

Rita Gaio

Rute Pedro

- ## 12944 | Study of the mechanism of action of Melissa officinalis L. extracts in inhibiting the growth of human tumor cellular lines

Magalhães, Daniela B., i3S/IPATIMUP/FFUP, Portugal
Castro, Inês, i3S/IPATIMUP/FMUP, Portugal
Pereira, Joana M., i3S/IPATIMUP/FFUP, Portugal
Lopes-Rodrigues, Vanessa, i3S/IPATIMUP/ICBAS, Portugal
Ferreira, Isabel C.F.R., Mountain Research Center (CIMO), ESA, Polytechnic Institute of Bragança, Portugal
Xavier, Cristina P.R., i3S/IPATIMUP, Portugal
Vasconcelos, M.Helena, i3S/IPATIMUP/FFUP, Portugal

Melissa officinalis L., commonly known as "lemon balm" is a perianal herbaceous plant from the family Laminaceae, native in Europe particularly in the Mediterranean region. Rosmarinic acid, the most abundant phenolic compound derived from caffeic acid, and some flavonoids such as luteolin-7-O-glucoside are described as responsible for its antimicrobial properties, anti-inflammatory, antioxidant and even anti-tumor activities.
Previous studies have investigated the antitumor effects of *M. officinalis* extracts, including aqueous, ethanolic and hydro-alcoholic extracts, in various human tumor cell lines. However, to our knowledge, the mechanism of action of the extracts has never been investigated. Therefore, the aims of this project are to: i) investigate if 5 different extracts of *Melissa officinalis*, prepared with different extraction methods, have cell growth inhibitory activity in three human tumor cell lines: NCI-H460 (non-small cell lung cancer), MCF-7 (breast adenocarcinoma) and AGS (gastric adenocarcinoma) and ii) study the mechanism of action of the most potent extract.
Results showed that all the extracts decreased cell growth in all tumor cell lines, in a concentration-dependent manner. The ethanolic extract was the most potent one, presenting a 50% growth inhibition concentration (GI50) of approximately 100.9 µg/mL in the NCI-H460 cells (most sensitive cell line). Current work is confirming the effect of this extract on cell cycle and apoptosis.